

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) PACKAGE FOR AMPOULES, GLASSES, PHIALS OR THE LIKE

- (71) We, OTTO HÖFLIGER and RUDOLF KARG, both German Citizens, of Postfach 118, Heerstrasse, Waiblingen bei Stuttgart, Germany, trading as HÖFLIGER & KARG, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—
- This invention relates to a package, for ampoules, phials, bottles, glasses or like articles likely to be exposed to the danger of breakage. Cupped or pocketed packing inserts, which are inserted into folding boxes, are generally used for packing ampoules or the like. In this connection, the packing inserts are provided with recesses or pockets which are adapted to the shape and size of the articles that are to be packed. Furthermore, these recesses or pockets have been formed with nose-shaped projections which retain the articles in their positions. This known form of packing insert is adequate for the conventional packing of ampoules or the like. However, the known packing inserts are not suitable for the packing together of ampoules and glasses or phials which contain different substances, for example for producing an injection solution, as a common package. In common packaging of different substances, in order to avoid mistakes, the ampoules and glasses or phials of the same sort have to be accommodated together in one packing insert, and because of this a comparatively large and therefore unwieldy, package emerges. The use of two packing inserts stacked one above the other, and each of which contains ampoules, glasses, phials or the like having respective substances therein and which are inserted jointly into a single folding box, is out of the question for the above-mentioned reasons, since, after removal from the folding box, the two packing inserts do not form an inseparable unit.
- In addition to this, in the case of the known
- packing inserts, no special measures of any kind are taken which protect the packed containers from breakage.
- An object of the present invention is to avoid the defects attendant upon the known packing inserts and to provide a package which protects the packed articles effectively against breakage and retains them in respective predetermined positions.
- With this object in view the present invention provides a package for ampoules, phials or like article likely to be exposed to the danger of breakage, comprising a casing having two halves which are adapted to be folded together, in hinged fashion, to lie one against the other and to be so retained, the casing halves incorporating recesses adapted substantially to the shape and size of the articles to be packed and formed with nose-shaped projections for retaining the articles therein, the recesses of one half of the casing being offset relative to the recesses of the other half of the casing.
- With this arrangement, it is reliably assured that the articles retained in the two casing halves cannot impact against one another even if substantial stresses are applied to the package.
- The arrangement may be such that the two casing halves have recesses of different shapes and sizes for the reception of various articles. Advantageously the recesses of one casing half are designed to receive ampoules and those of the other casing half are designed to receive phials, bottles or the like.
- In such a package, the intermediate webs bounding the recesses for the ampoules are preferably wider than the intermediate webs bounding the recesses for the phials or bottles. The nose-shaped projections hold the respective articles in their central regions and furthermore, enable the two casing halves to be of equal size in their external dimensions.
- In a further advantageous development of

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the invention, the recesses are adapted substantially to the shape and size of the articles except in those regions which correspond to those parts of the articles, e.g. ampoules, which are most susceptible to breakage, where the recesses deviate from the shape and size of the respective article. In this connection, each recess preferably has, in the base region of the ampoule, a widening which is provided with ribs or the like which supports the base of the ampoule. There are preferably further provided, in the recesses, inwardly directed ribs for supporting the head regions of the ampoules. Additionally, the two casing halves are conveniently provided with respective press-stud like closure elements having mutually inclined engagement surfaces, for releasably retaining the casing halves together in their folded position wherein they overlie one another. To facilitate opening of the package, each casing half preferably has, on the side remote from the hinge-like connection, one or more indentations which, in the folded position of the two halves, form one or more notches by which purchase may be obtained for opening the package.

The invention will be described further, by way of example, with reference to the accompanying drawing, in which:—

Fig. 1 is a plan view showing a preferred embodiment of the package of the invention in its opened-out flat condition and containing one ampoule and one phial;

Fig. 2 is an end elevation of the package of Fig. 1, but showing the same in its folded-up or closed condition; and

Fig. 3 is a sectional view taken on the section line indicated in Fig. 2, but showing the package filled with ampoules and phials.

As shown more especially by Fig. 1, the package of the invention comprises a casing having two halves 1 and 2 which are produced by cupping, pressing or vacuum forming a plastics or metal foil or the like and which are provided respectively with recesses 3, 4 for the reception respectively of ampoules 5 and phials or bottles 6. To ensure that the ampoules 5 are gripped in the recesses 3, when they are inserted therein, the recesses 3 are formed with respective nose-shaped projections 7 at opposite sides of their entries, and for the same purpose the recesses 4 have respective nose-shaped projections 8. The material of the package is such that after formation thereof ampoules or the like can be pressed into the recesses by deformation of the package.

Furthermore, as is more especially shown in Figs. 1 and 3, the arrangement is such that the recesses 3 are staggered relative to the recesses 4. Thus, in the folded-up position of the two halves 1 and 2, wherein they overlie or abut one against the other as shown in Figs. 2 and 3, intermediate webs 9 bounding the recesses 3 are opposite to and confront the phials or bottles 6 and similarly the intermediate webs

10 bounding the recesses 4 are opposite to and confront the ampoules 5. Very effective protection, against breakage, of the packed articles is achieved by this measure.

In particular, the recesses 3 for the ampoules 5, which are particularly susceptible to breakage, are so designed that the ampoules 5 are substantially protected against shocks. In their lower regions, these recesses 3 each have a widened portion 11 provided with inwardly directed webs or ribs 12 adapted to engage with and support the base of the ampoules. Furthermore, the walls of the recesses 3 have longitudinally extending grooves 13. Inwardly-directed ribs 14 are also provided to support the head regions of the ampoules 5. With this design of the recesses 3, the ampoules 5 are supported and held in such a way that impacts, arising for example from the package being dropped, are absorbed by the material of the package and prevented from damaging the ampoules 5.

Despite the staggered arrangement of the recesses 3 and 4, the two casing halves 1 and 2 are equal in their external dimensions. Press-stud like closure elements 16, 17 are present on the respective ones of the two halves 1, 2, which can be folded relative to one another along a perforated or notched line 15 which provides a hinge-like connection between the two halves. The closure elements 16, 17 have mutually inclined engagement surfaces to allow for a slight misalignment or relative movement of the two casing halves, one against the other, for example in the case of inaccurate folding of the halves 1, 2 about the line 15. Furthermore, the casing halves 1 and 2 are provided with indentations 18, 19 which, in the folded position of the two halves, as is shown by Fig. 2, forms a notch or finger-hold to facilitate opening of the package. Furthermore, the two casing halves 1, 2 are provided with moulded projections 20, 21 which facilitate stacking of a plurality of the casings. The shape of the outwardly directed projection 21 in the casing half 1 facilitates removal of the ampoules 5.

WHAT WE CLAIM IS:—

1. A package for ampoules, phials or like articles likely to be exposed to the danger of breakage, comprising a casing having two halves which are adapted to be folded together, in hinged fashion, to lie one against the other and to be so retained, the casing halves incorporating recesses adapted substantially to the shape and size of the articles to be packed, and formed with nose-shaped projections for retaining articles therein, the recesses of one half of the casing being offset relative to the recesses of the other half of the casing.

2. A package as claimed in Claim 1, in which each of the casing halves has respective recesses of shape and size different from those of the other casing half to receive respective different containers.

3. A package as claimed in Claim 2, in

which the recesses of one casing half are designed to receive ampoules, and the recesses of the other casing half are designed to receive phials, bottles or the like.

5 4. A package as claimed in Claim 3, in which the intermediate webs bounding the recesses for the ampoules are wider than the intermediate webs bounding the recesses for the phials, bottles, or the like.

10 5. A package as claimed in Claim 3 or 4, in which the recesses designed to receive the ampoules are each adapted substantially to the shape and size of the ampoules except in the regions corresponding to those parts of the ampoules which are most susceptible to breakage, where the recesses deviate from the shape and size thereof.

15 6. A package as claimed in Claim 5, in which each recess designed to receive an ampoule has a widened portion which is provided with a rib adapted to engage with and support the base of the ampoule.

20 7. A package as claimed in Claim 5 or 6 in which inwardly directed ribs are provided in the recesses designed to receive the ampoules to support a head region of the respective ampoule.

25 8. A package as claimed in any preceding

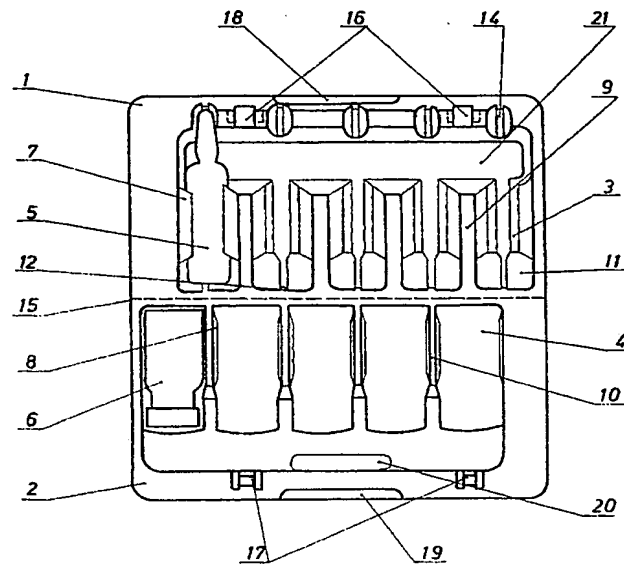
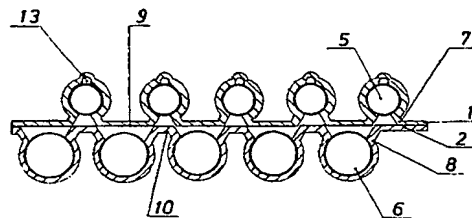
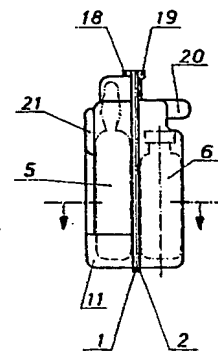
Claim in which the two halves of the casing have respective press-stud-like closure elements for releasably retaining the two halves together in their folded position wherein they lie one against the other. 30

9. A package as claimed in Claim 8, in which the press-stud-like closure elements have mutually inclined engagement surfaces. 35

10. A package as claimed in any preceding Claim in which each casing half has, on the side opposed to the hinge-like connection, one or more indentations which, in the folded position of the two halves, form one or more notches or fingerholds to facilitate opening of the casing. 40

11. A package for ampoules, phials, bottles or like articles substantially as hereinbefore described with reference to and as illustrated in the accompanying drawing. 45

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Fig.1**Fig.2****Fig.3**